CHAPTER 13
Appendices

IOWATER Liability Waiver (copy)
Resupply Policy
Calculating Stream Flow, Average Depth, and Average Velocity
Iowa DNR Environmental Services Division

Safety Information, Release & Waiver Of Liability

The Iowa Department of Natural Resources intends that citizen monitors participating in the IOWATER program are not acting on behalf of the Iowa Department of Natural Resources in any official capacity. As such, it is the Department's intent that citizen monitors are not authorized to be considered agents, employees, or authorized representatives of the Department for any purpose, and that citizen monitors are not entitled to the same benefits enjoyed by the Department employees.

Citizen monitors must recognize the potential for injury to themselves and their real and personal property, and to other persons and their real and personal property, which may result from citizen volunteer activities conducted under the IOWATER Volunteer Water Quality Monitoring Program. The Department intends that citizen monitors expressly assume all risks and liability for any injuries to, or caused by citizen monitors under the IOWATER program.

Citizen monitors will be instructed in proper sampling techniques and handling of all equipment offered through the IOWATER program. They also will be cautioned that if there is ever any doubt, they should give safety priority over sampling. Every participant also will receive a copy of the IOWATER manual and the stream assessment procedures.

This affects any rights you may have if you are injured or otherwise suffer damages while participating in any activity in conjunction with activities sponsored by IOWATER.

Are you 18 years old or over? ☐ Yes ☐ **No** – ***a legal parent/guardian must also sign this form***

The volunteer and parent/legal guardian(s), by signing below, recognize that the IOWATER program involves some risk and that she/he takes responsibility for all action or injury that may result in participating in water monitoring activities. **All children under 18 must have a parent/legal guardian signature(s) below.**

I, _____ (volunteer name) and _____ (parent/legal guardian name), hereby release, waive, discharge and covenant not to sue the State of Iowa, Iowa Department of Natural Resources, county or other agencies, partners, cooperating landowners, event volunteers and coordinators, sponsors, and any of the offices, servants, agents and employees of the above-mentioned entities (hereinafter referred to as "RELEASEES") for any liability, claim and/or cause of action arising out of or related to any loss, damage or injury, including death, that occurs as a result of _____'s (volunteer name) participation in IOWATER monitoring activities.

I agree to indemnify and hold harmless the RELEASEES whether injury is caused by _____'s (volunteer name) negligence, the negligence of the RELEASEES or the negligence of any third party. I further agree that this Release and Waiver of Liability shall bind the members of my family and spouse, if I am alive, and my heirs, assigns and personal representatives, if I am deceased, and shall be deeded as a RELEASE, WAIVER, DISCHARGE AND COVENANT NOT TO SUE the above-named RELEASEES. I hereby further agree that this Release and Waiver of Liability shall be construed in accordance with the laws of the State of Iowa.

I understand that photographs may be taken during IOWATER activities may be used in the future to chronicle and publicize the program.

By signing this Release and Waiver of Liability,
I state that I have read and understood the conditions set forth in this Release
and that I agree to all conditions set forth herein, and that I sign this voluntarily.

Signature of Volunteer	**Printed Name of Volunteer**	**Date**
Signature(s) of Parent/Legal Guardian	**Printed Name(s) of Parent/Legal Guardian**	**Date**

IOWATER Resupply Policy

Due to the IOWATER program's need to justify the expense of resupplying materials, we have created "IOWATER Program Criteria for Receiving Additional Monitoring Equipment and Supplies."

To receive additional IOWATER monitoring supplies, you must submit a minimum of **three chemical/physical assessments within the past 12 months from the date of your request. However**, it is the policy of the IOWATER program to encourage volunteers to monitor. If you wish to receive additional supplies or replace expired materials and do not meet the above policy, please answer the following questions to help determine your resupply eligibility. Decisions will be made on a case-by-case basis and IOWATER staff may contact you to discuss your individual situation.

1. Will this equipment be used for educational purposes? Yes ☐ No ☐
2. Are you monitoring as part of a "special project"? Yes ☐ No ☐
    a. Enter the name of the project and the name of the project contact (examples: Walnut Creek Watershed, iGISST):_____
3. Are you a returning volunteer? (who has been inactive for more than 1 year) Yes ☐ No ☐

All supply requests will be handled under the sole discretion of IOWATER staff and may be contingent upon availability of requested materials. The IOWATER program may discontinue this policy at any point in time, especially due to financial constraints.

If you have expired equipment that you are no longer using please return it to the IOWATER program at Iowa DNR – IOWATER; 502 E. 9th St.; Des Moines, IA 50319

Equipment Request Form

Name: _____ IOWATER ID: _____ Site Number(s):_____

Address: _____ City: _____ State: ____ Zip:_____

Email: _____ phone number: _____

Equipment (please fill in quantities needed):

_____ CHEMets® Phosphate Ampoules
_____ CHEMets® Phosphate Color Comparator
_____ CHEMets® Phosphate Activator Solution
_____ Hach® Nitrite-N/Nitrate-N test strips
_____ Coliscan Easygel® Media Bottles
_____ Eyedroppers
_____ CHEMets® Dissolved Oxygen Ampoules
_____ CHEMets® Dissolved Oxygen Color Comparator
_____ Hach® Chloride titrators
_____ Hach® pH test strips
_____ Petri Dishes

Other: _____

Please fill out this form and send it to Iowa DNR – IOWATER; 502 E. 9th St.; Des Moines, IA 50319.

This form is also available online at http://www.iowadnr.gov/Environment/WaterQuality/WaterMonitoring/IOWATER.aspx and can be submitted by email.

Calculating Stream Flow, Average Depth, and Average Velocity

When stream width, depth, and velocity measurements are submitted to the IOWATER database, average stream depth and velocity, and total flow are automatically calculated for you. During the IOWATER workshops, a number of people have requested that we provide the formulas used for calculating average stream depth, average stream velocity, and total flow. Below are the calculations:

SD = stream depth (meters; SD_1 is the stream depth at spot 1)
1, 2, etc = spots along the stream transect
n = number of spots along the transect
W = width of box at each spot; 1 meter is used
SV = stream velocity (1 meter divided by seconds measured; meters per second)
* = multiplier
÷ = divider

Average Stream Depth (meter)

Average Stream Depth = $[SD_1 + SD_2 + SD_n] \div n$

NOTE: Be sure to convert the measurement from centimeters to meters.

Total Flow (cubic meters per second or m^3/s)

For total flow, imagine a box placed around each spot on your stream transect. A flow is determined for each box and summed for all boxes. Flow associated with each box is calculated by multiplying the width of the box at each spot (1 meter) by stream depth (which you measure) by the velocity of the spot (in the field you measure the number of seconds it takes for the tennis ball to travel one meter; velocity is one meter divided by the number of seconds). The flow of each box is in cubic meters per second (m^3/s). The flow of each box is added together to give total flow.

Total Flow = $(W_1*SD_1*SV_1) + (W_2*SD_2*SV_2) + (W_n*SD_n*SV_n)$

Average Stream Velocity (meters per second or m/s)

Average stream velocity is calculated by dividing total flow by the cross-sectional area of your transect. The cross-sectional area is determined by calculating a cross-sectional area for the box at each spot of your transect and then summing the cross-sectional areas.

Average Stream Velocity = Total Flow $\div[(W_1*SD_1) + (W_2*SD_2) + (W_n*SD_n)]$

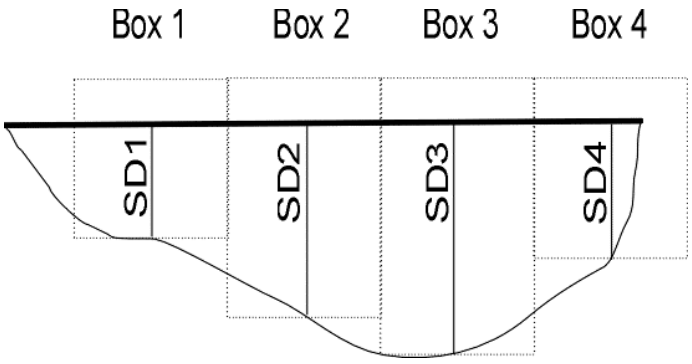
EXAMPLE: Sally and Bill measure stream width, depth, and velocity for Jack Creek. Jack Creek is 4.2 meters wide.

	Stream Depth (meters)	Stream Velocity (meters/seconds)
Spot 1	0.21	1 meter/8 seconds (0.125)
Spot 2	0.45	1 meter/4 seconds (0.25)
Spot 3	0.62	1 meter/3 seconds (0.33)
Spot 4	0.35	1 meter/7 seconds (0.143)

Average Stream Depth = (0.21 m + 0.45 m + 0.62 m + 0.35 m) ÷ 4 = 0.41 m

Total Flow = (1 m * 0.21 m * 0.125 m/s) + (1 m * 0.45 m * 0.25 m/s) + (1 m * 0.62 m * 0.33 m/s) + (1 m * 0.35 m * 0.143 m/s) = 0.39 m^3/second

Average Stream Velocity = Total Flow ÷ Cross-Sectional Area
Average Stream Velocity = 0.39 m^3/second ÷ [(1 m * 0.21 m) + (1 m * 0.45 m) + (1 m * 0.62 m) + (1 m * 0.35 m)] = 0.24 m/s



Cross-sectional view of a stream

Iowa Department of Natural Resources
Environmental Services Division Field Offices

The Compliance and Enforcement Bureau includes six field offices throughout the state. They are local representatives of the Environmental Services Division, and a primary task for them is helping people to understand environmental services programs.

They conduct routine inspections of all facilities permitted by the Environmental Services Division. Staff in the field help individuals and businesses understand when to apply for a permit and how to meet permit requirements. Field staff also respond to spills and handle complaints from the public, often resolving disputes between neighbors. If technical assistance and cooperative activities do not resolve a problem, the field office staff may recommend more formal measures to seek compliance.

www.iowadnr.gov – Field Offices/Services
http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Emergency-Planning-EPCRA/Spill-Reporting
24 – hour Emergency Spill Response: **515-725-8694**

Field Office 1
909 West Main Suite #4
Manchester, IA 52057
Phone: (563) 927-2640

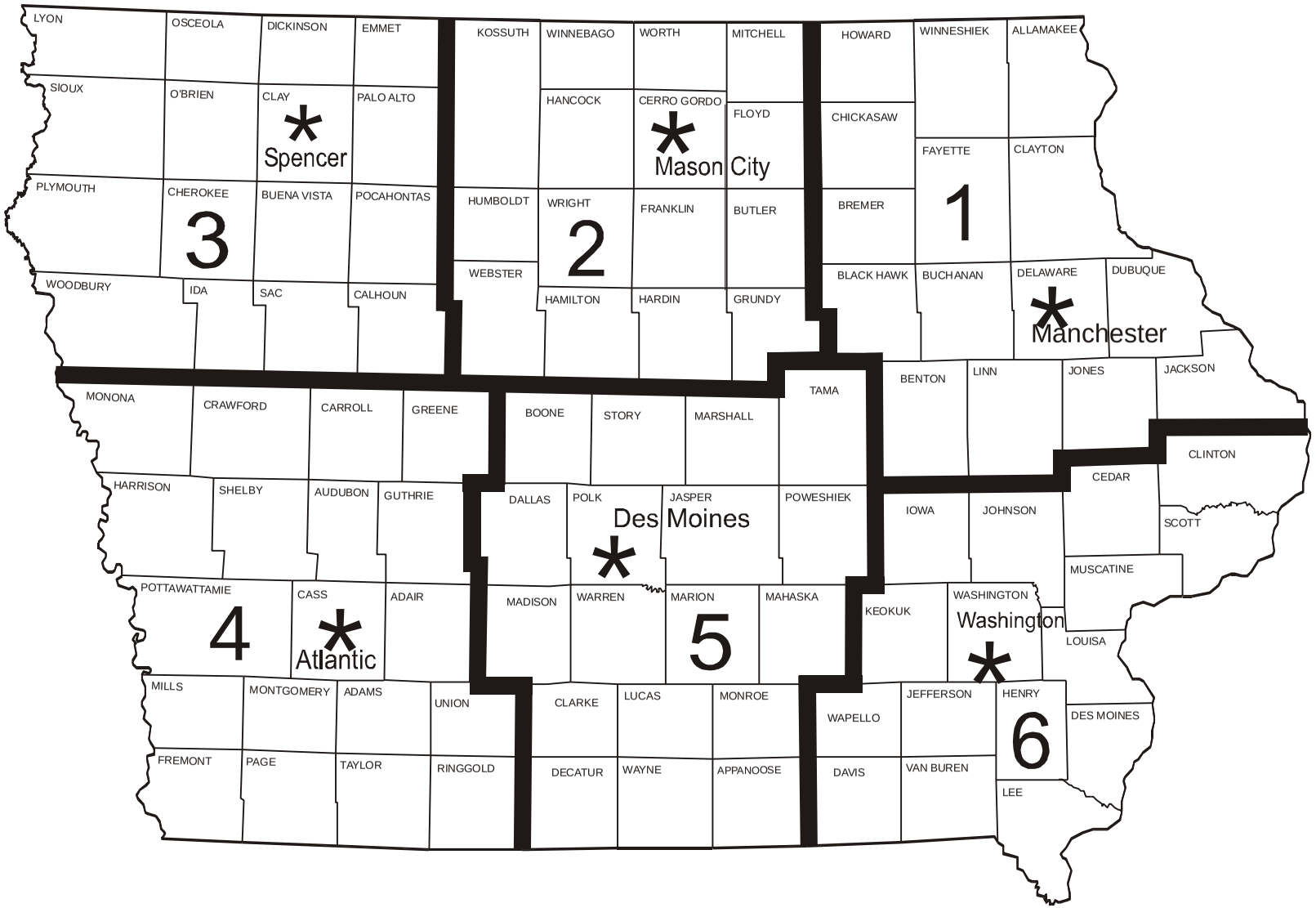
Field Office 2
2300 15th Street SW
Mason City, IA 50401
Phone: (641) 424-4073

Field Office 3
1900 North Grand Avenue
Spencer, IA 51301
Phone: (712) 262-4177

Field Office 4
1401 Sunnyside Lane
Atlantic, IA 50022
Phone: (712) 243-1934

Field Office 5
401 SW 7th, Suite 1
Des Moines, IA 50309
Phone: (515) 725-0268

Field Office 6
1023 West Madison Street
Washington, Iowa 52353-1623
Phone: (319) 653-2135


LYON
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DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
O'BRIEN
CLAY
Spencer
PALO ALTO
HANCOCK
CERRO GORDO
Mason City
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
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BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
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FRANKLIN
BUTLER
BREMER
1
WEBSTER
BLACK HAWK
BUCHANAN
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